



Note:

Do not strike or damage the panel.



Note:

In the previous example, apply a bead of paint sealing mastic between the replaced part and the support on the vehicle before refitting the wing panel.



[Repair-40x01x28x08-02x21-1-1-1.xml](#)



XSL version : 3.02 du 22/07/11

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# CONNECTIONSFORPARTIALREPLACEMENTBYPATCHDRILLING

## 1. DISASSEMBLY

### 1- SCOURING

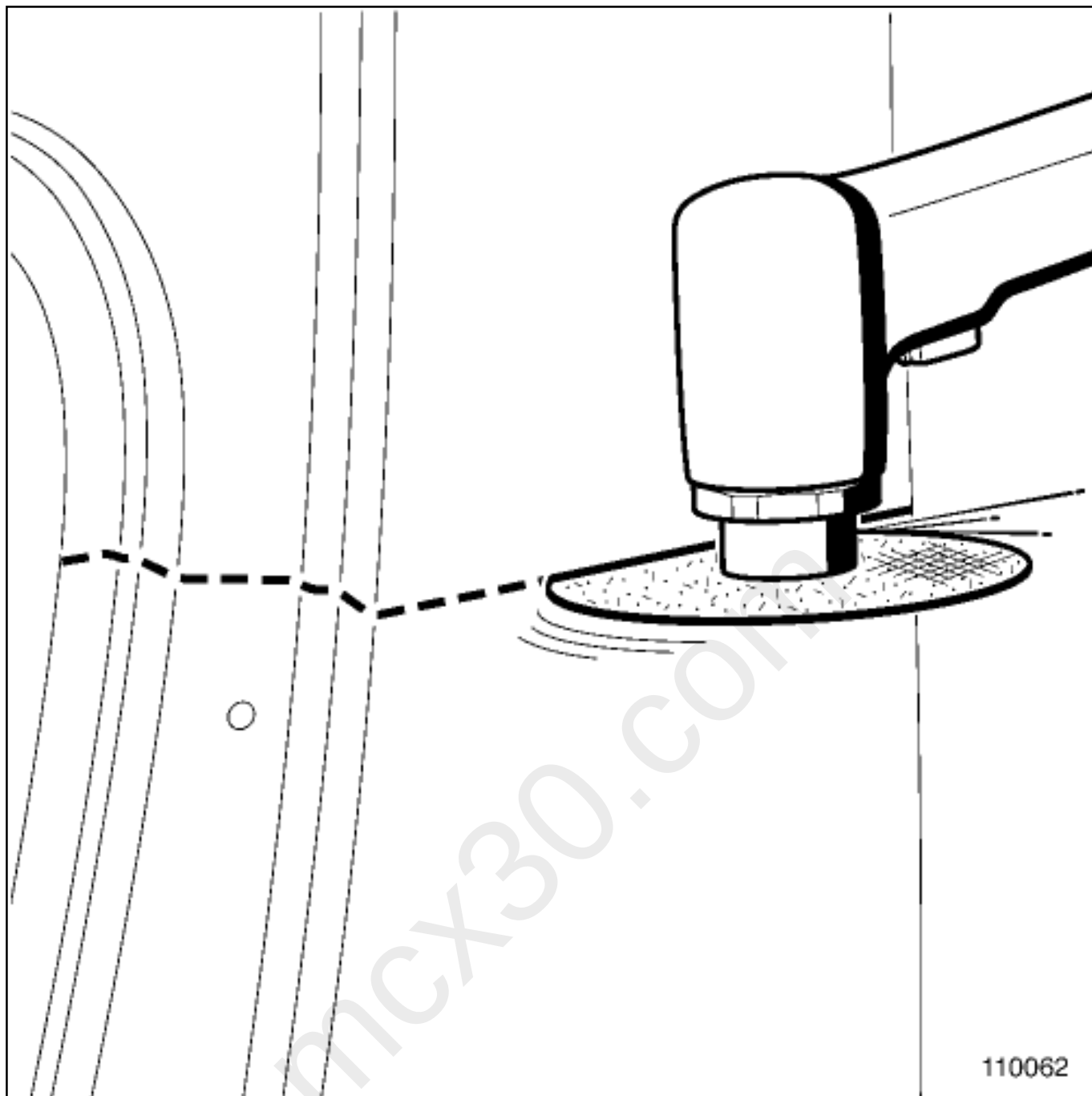
If necessary, scour the area where the partial cut will be made.

(see 05B, Equipment and Tools, Tools for stripping very thick soft mastic: Use)

(see 05B, Equipment and Tools, Tools for scraping rigid adhesives and paint: Use)

### 2- CUTTING

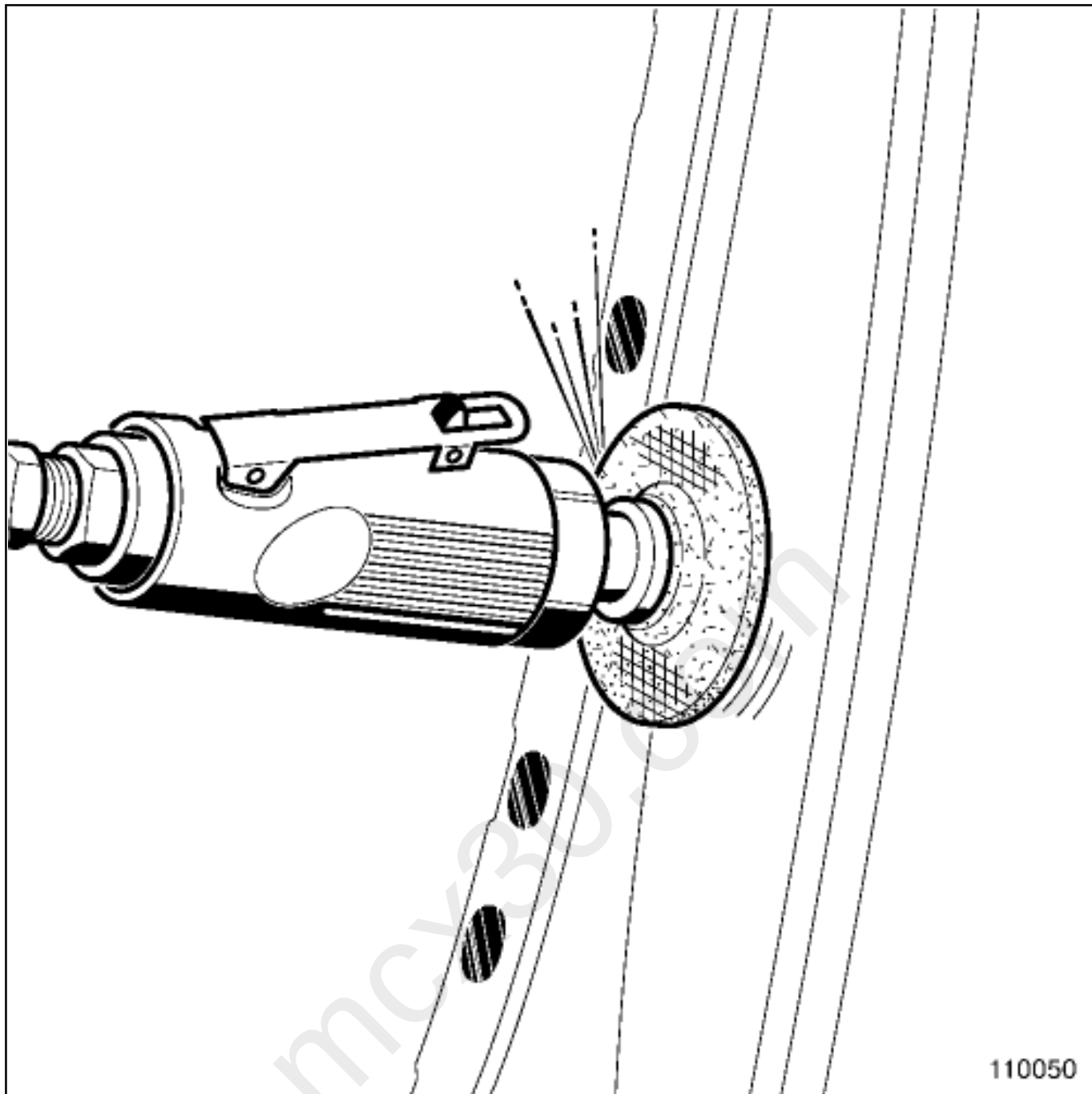
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Cut the damaged part on the vehicle approximately 40 mm from the definitive cut; refer to the MR for the vehicle concerned.

[\(see 05B, Equipment and Tools, Tools for cutting a structural component: Use\)](#)

### 3- UNPICKING



Unpick the spots holding the part on the vehicle.

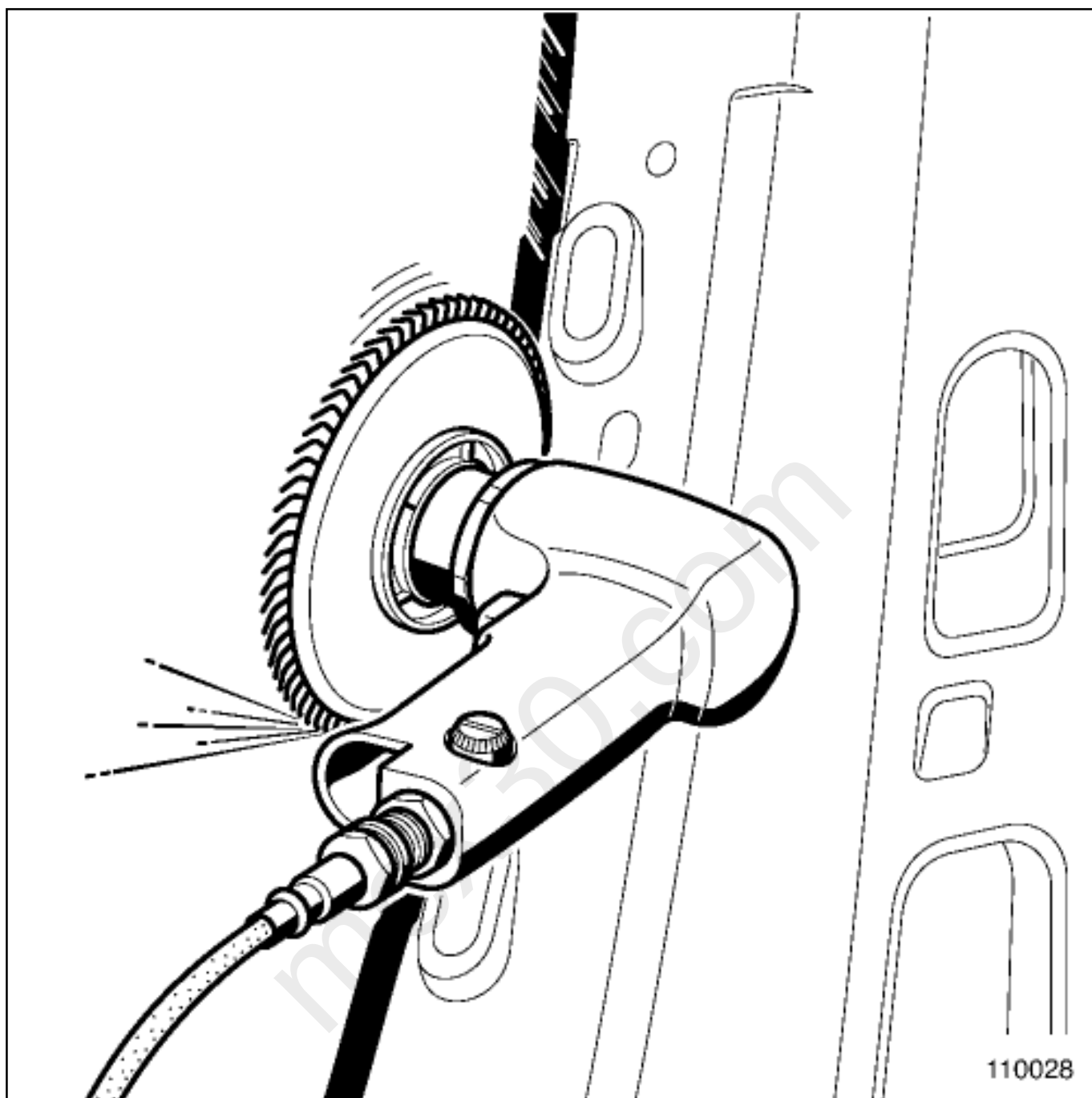
[\(see 05B, Equipment and Tools, Tools for unpicking a structural component: Use\)](#)

Remove the damaged part.



Note:

Do not strike or damage the panel.



Level off all the welding residue as well as that left by the cutting.

(see 05B, Equipment and Tools, Tool for levelling off weld residue: Use)

## 2. PREPARATION BEFORE ASSEMBLY

### 1- LOCATION OF THE WELDS AND NUMBER OF POINTS.

The step drilling patch joint can be made in two ways:

Resistance spot welding:

[\(see 40B, Electrical resistance welded connections, Electrical resistance spot welding connection with direct access: Description\)](#)

Gas metal arc spot welding (GMAW):

[\(see 40C, Gas metal arc welded connections, Connections by arc welding under shielding gas: Description\)](#)

In both cases, refer to the indications given in the vehicle's MR to find out the weld locations.

Apply a bead of chain weld in visible areas.

[\(see 40C, Gas metal arc welded connections, Connections by arc welding under shielding gas: Description\)](#)

Cut the replacement part 80 mm larger than the section removed from the damaged part to ensure coverage.

## 2- ADJUSTMENT BEFORE ASSEMBLY

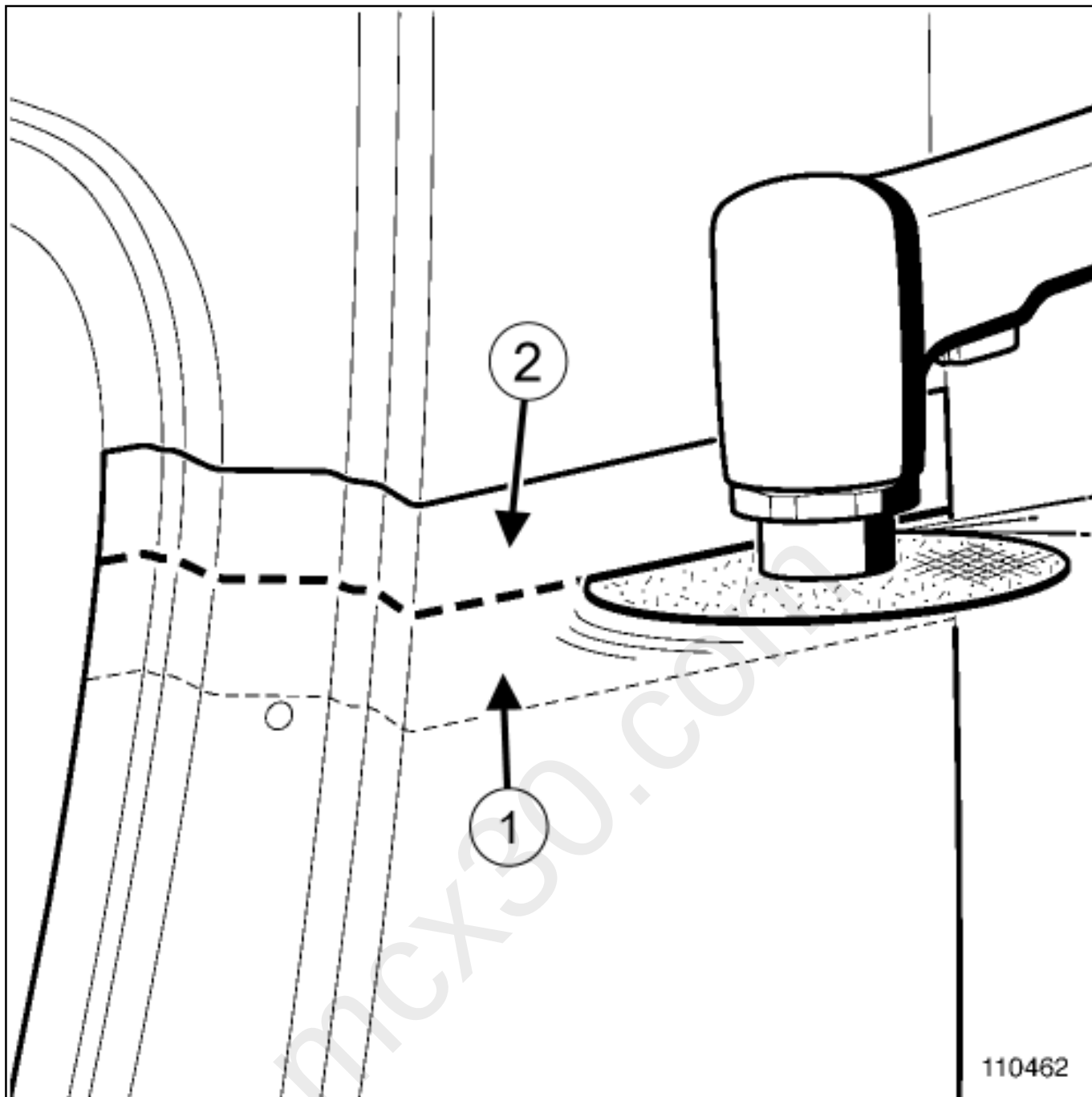
Position the replacement part, adjust it and fix it using the locking pliers.

If necessary, reassemble the adjacent components and check the panel gaps.

[\(see 05B, Equipment and Tools, Tools for adjusting and supporting a structural component: Use\)](#)

## 3- MARKING AND IDENTIFYING THE JOINTS

Mark the areas to be scoured in accordance with each type of joint.



Cut the two components simultaneously approximately 40 mm from the cut previously made.

[\(see 05B, Equipment and Tools, Tools for cutting a structural component: Use\)](#)

Remove the part and unpick the remaining metal strip(1) on the vehicle.

[\(see 05B, Equipment and Tools, Tools for unpicking a structural component: Use\)](#)

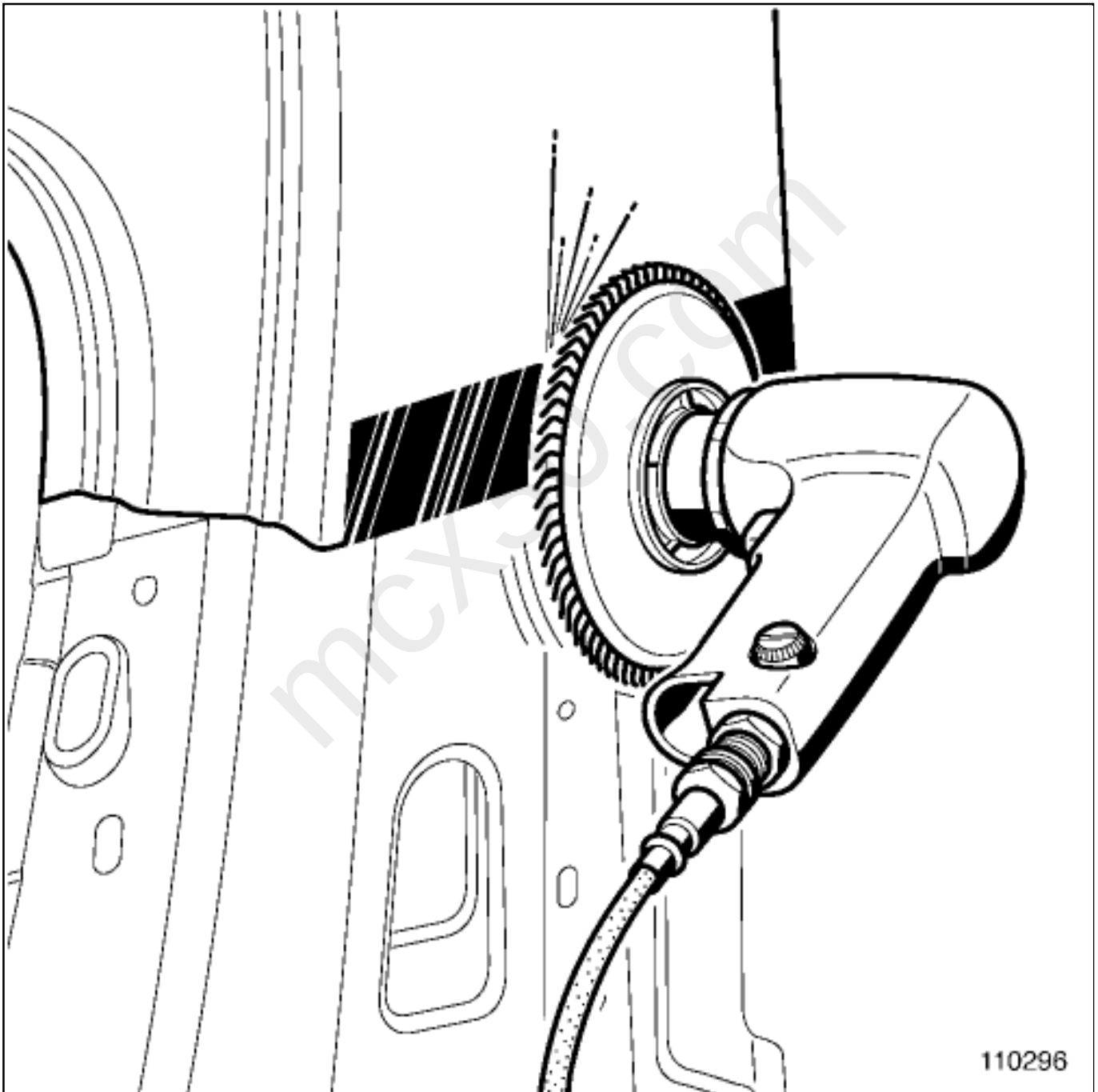
Recover the cut off(2) from the replacement part.

From the cut off section of the replacement part, take a strip of metal approximately 40 mm wide, adapted to the length of the step drilling area.

Scour both faces of the strip.

[\(see 05B, Equipment and Tools, Tools for scraping rigid adhesives and paint: Use\)](#)

#### 5- PREPARATION OF THE JOINTS ON THE VEHICLE



Scour the internal and external mating faces of the cut at the patch location.

(see 05B, Equipment and Tools, Tools for scraping rigid adhesives and paint: Use)

(see 05B, Equipment and Tools, Tools for stripping very thick soft mastic: Use)

#### 6- APPLY THE PROTECTION BEFORE ASSEMBLY

Position the acoustic inserts in the hollow sections, if necessary.

(see 04F, Bodywork products and mountings, Soundproofing products before assembly: Use)

(see 40J, Protective devices , Structural acoustic protection: Description)

Apply the anti-corrosion protection to the internal mating faces according to the type of weld.

(see 04F, Bodywork products and mountings, Anti-corrosion protection product before assembly: Use)

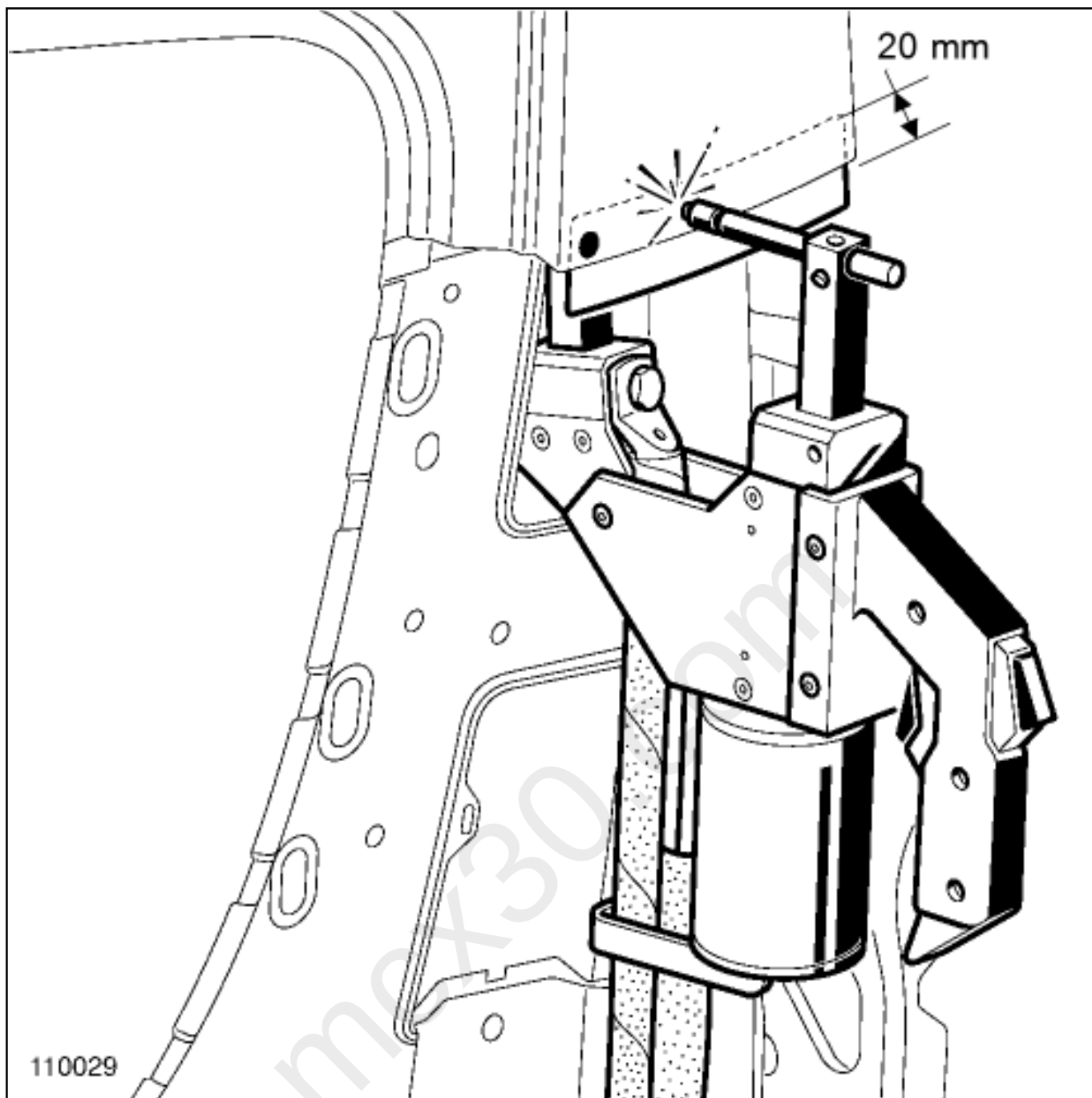
(see 40J, Protective devices , Anti-corrosion protection of joints before welding: Description)

#### 7- ADJUSTING THE WELDERS.

Before making the joints on the vehicle, carry out the tests required for adjusting the welders.

(see 40B, Electrical resistance welded connections, Electrical resistance spot welding connection: Precautions for the repair)

#### 8- WELDING THE PATCH



Weld the patch with resistance spot welds, respecting the spacing indicated in the vehicle's MR.

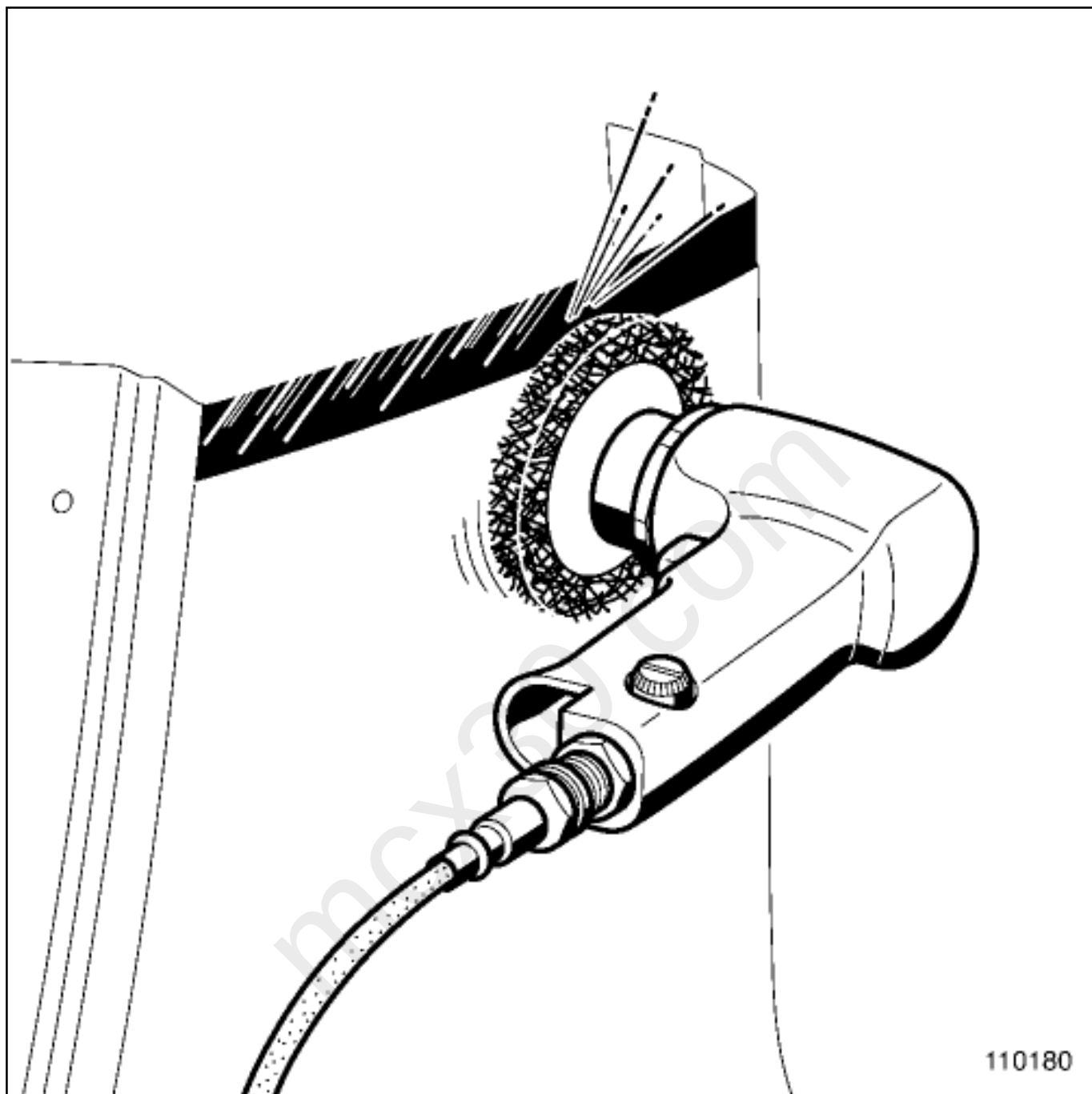
[\(see 40B, Electrical resistance welded connections, Electrical resistance spot welding connection with direct access: Description\)](#)

#### 9- FITTING AND ADJUSTING THE REPLACED PARTS

Position the patch, adjust it and fix it using locking pliers; the two panels overlap by approximately 20 mm .

[\(see 05B, Equipment and Tools, Tools for adjusting and supporting a structural component: Use\)](#)

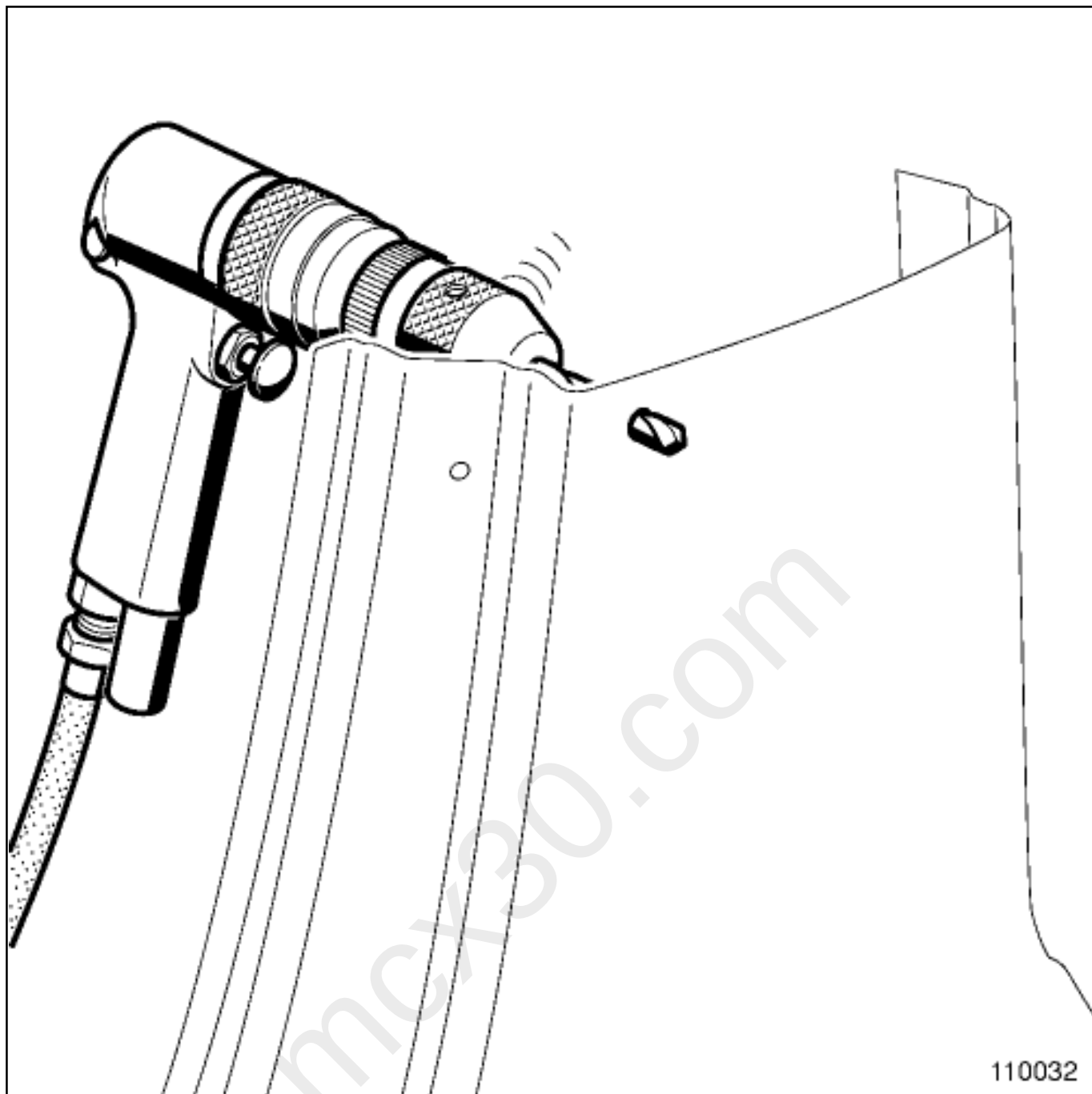
#### 10- PREPARING THE JOINT FACES OF THE REPLACEMENT PART WITH TWO FACE ACCESS



Scour the internal and external mating faces of the cut at the patch location.

(see 05B, Equipment and Tools, Tools for scraping rigid adhesives and paint: Use)

#### 11- PREPARING THE JOINT FACES OF THE REPLACEMENT PART WITH SINGLE FACE ACCESS

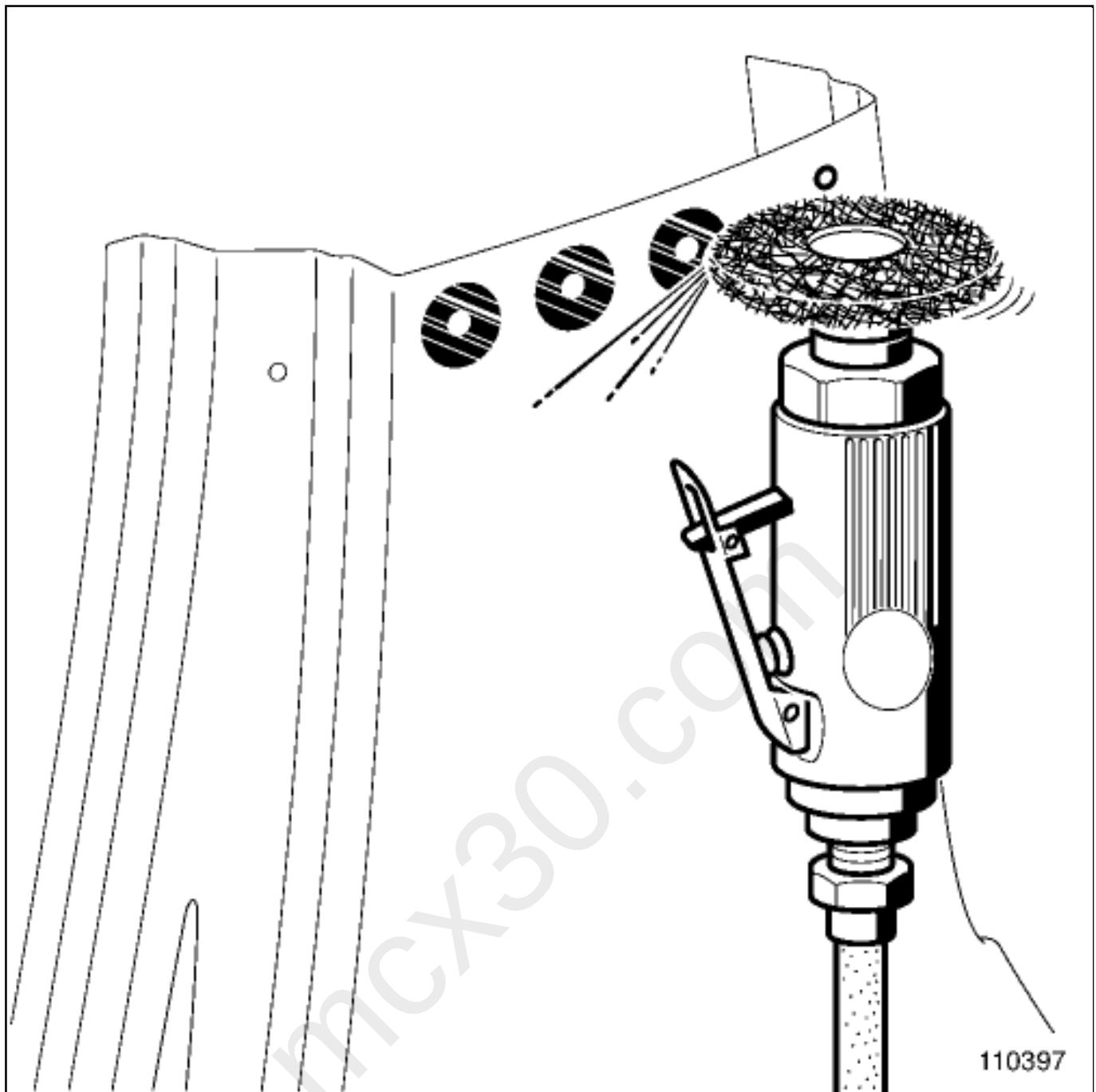


Drill or pierce the replacement part from the inside at the location of the patch, respecting the spacing indicated in the vehicle's MR.

See following table:

| Panel thickness (mm) | Drill bit diameter (mm) |
|----------------------|-------------------------|
| 0.6 to 1             | 6                       |
| 1 to 1.5             | 7                       |
| 1.5 to 2             | 8                       |
| 2 and more           | 10                      |

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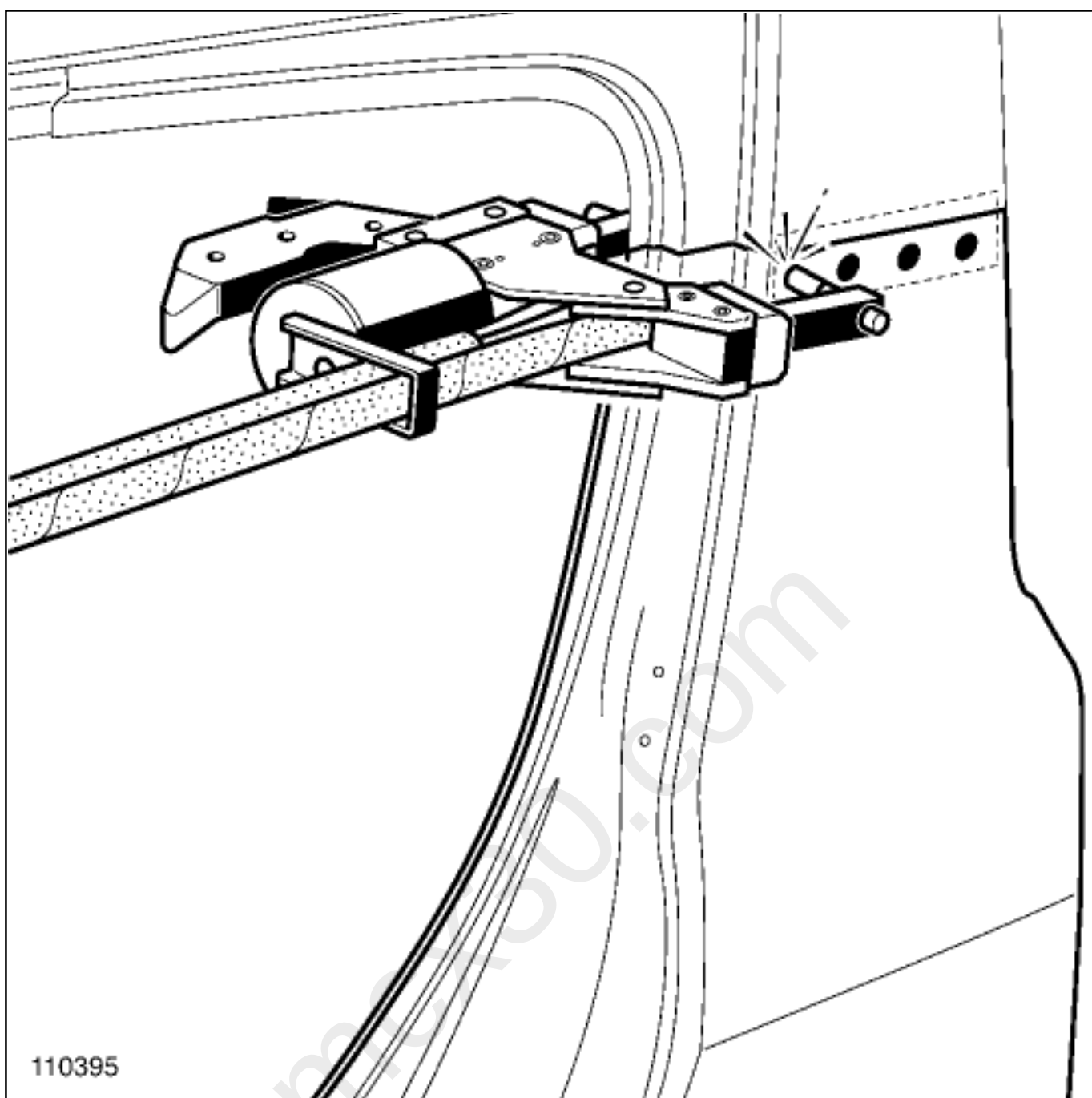
Scour the external mating face along the cut and the edges of the holes.

[\(see 05B, Equipment and Tools, Tools for scraping rigid adhesives and paint: Use\)](#)

Prepare the rest of the replacement part according to the different connections.

### 3. ASSEMBLIES

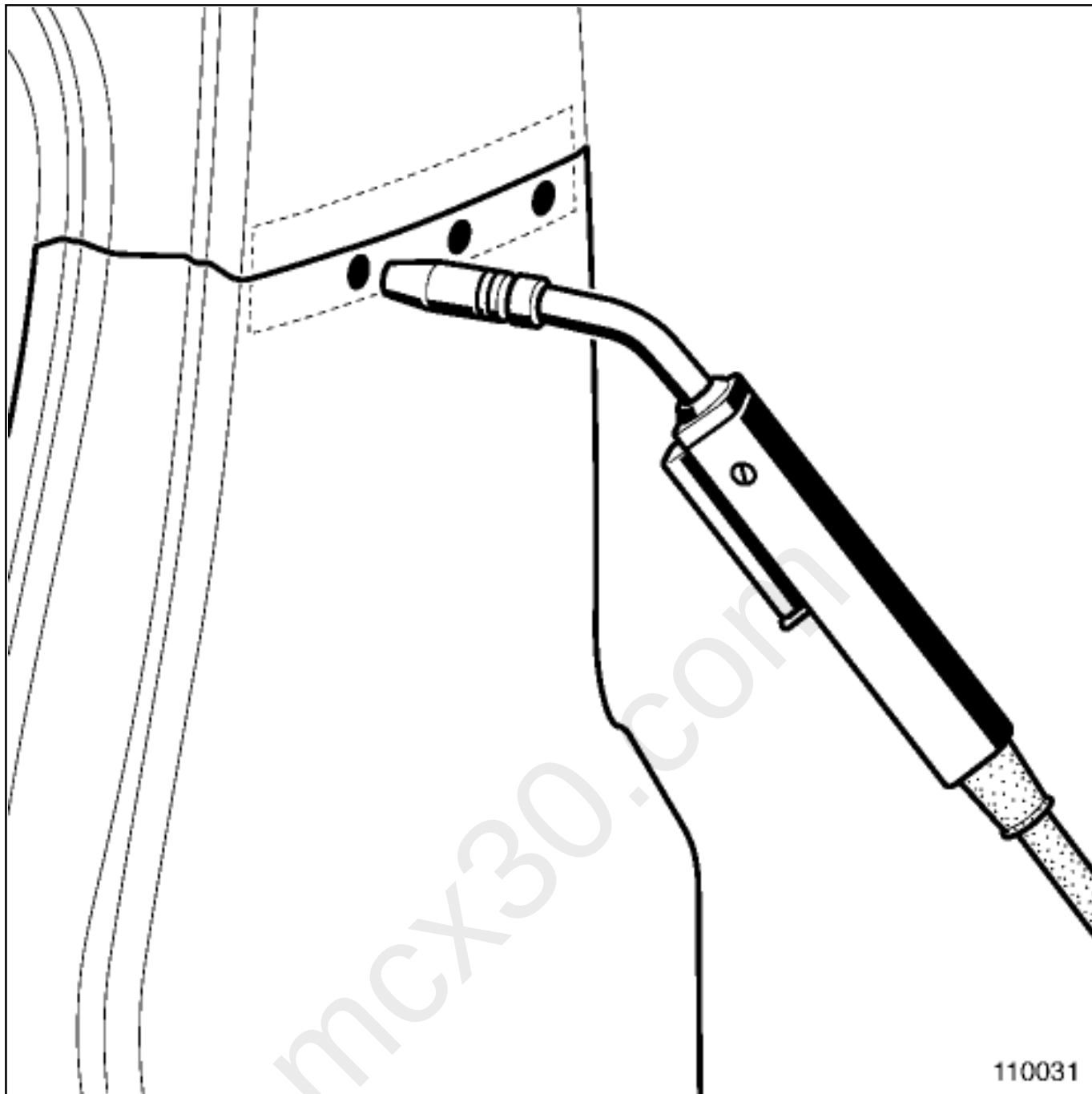
#### 1- WELDING AND ASSEMBLING THE NEW PART WITH TWO FACE ACCESS



Weld the replacement part with resistance spot welds, respecting the spacing indicated in the vehicle's MR.

(see 40B, Electrical resistance welded connections, Electrical resistance spot welding connection with direct access: Description)

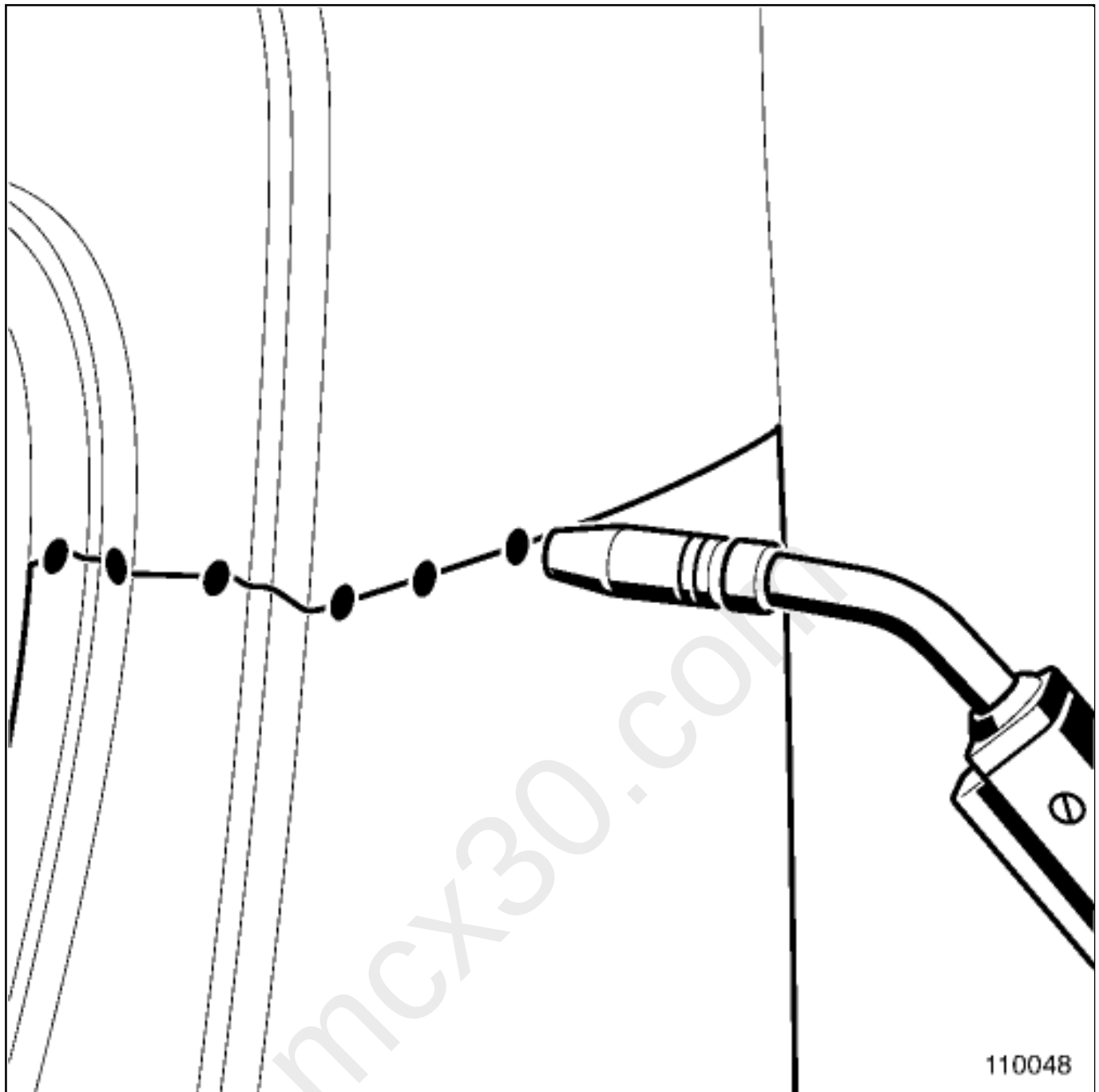
2- CARRYING OUT WELDING, ASSEMBLY WITH ONE FACE ACCESS



Weld the replacement part with GMAW plug welds

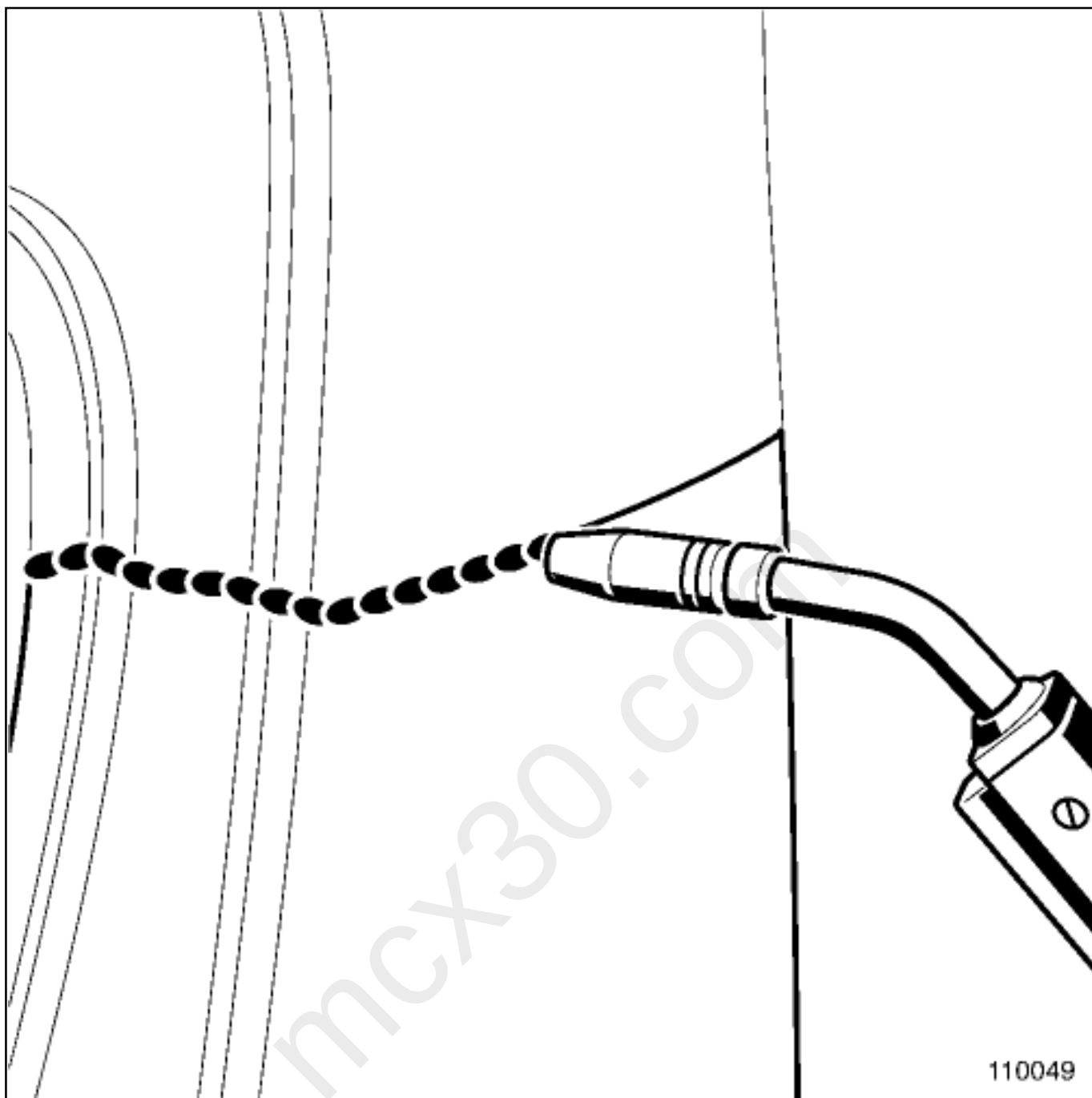
[\(see 40C, Gas metal arc welded connections, Connections by arc welding under shielding gas: Description\)](#)

### 3- SPECIAL FEATURES OF REINFORCING AN ASSEMBLY BY PATCH DRILLING



Make the anchoring points on the partial cut lines.

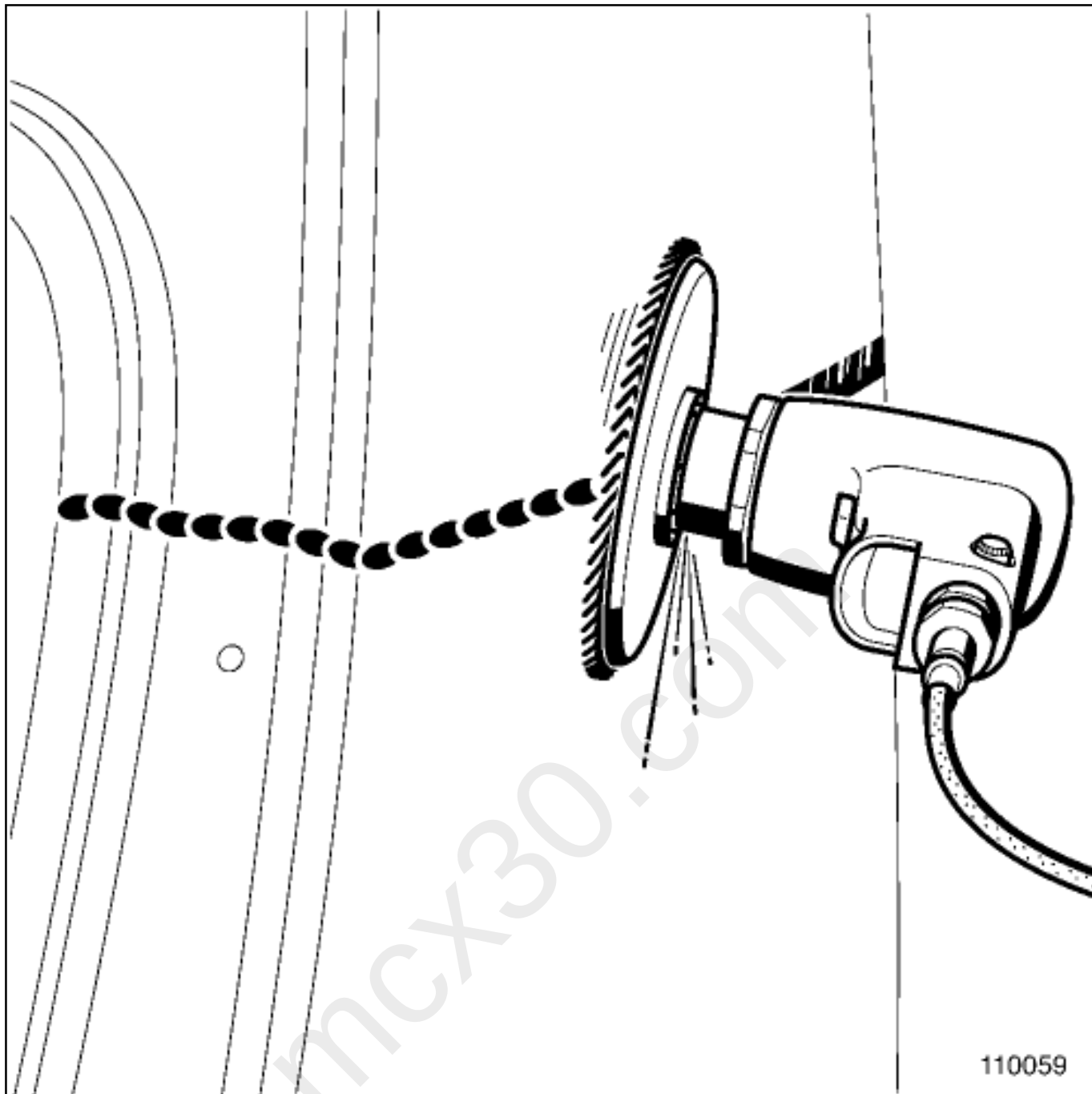
[\(see 40C, Gas metal arc welded connections, Connections by arc welding under shielding gas: Description\)](#)



Carry out the continuous weld along the whole cut.

[\(see 40C, Gas metal arc welded connections, Connections by arc welding under shielding gas: Description\)](#)

#### 4- GRINDING THE WELDS



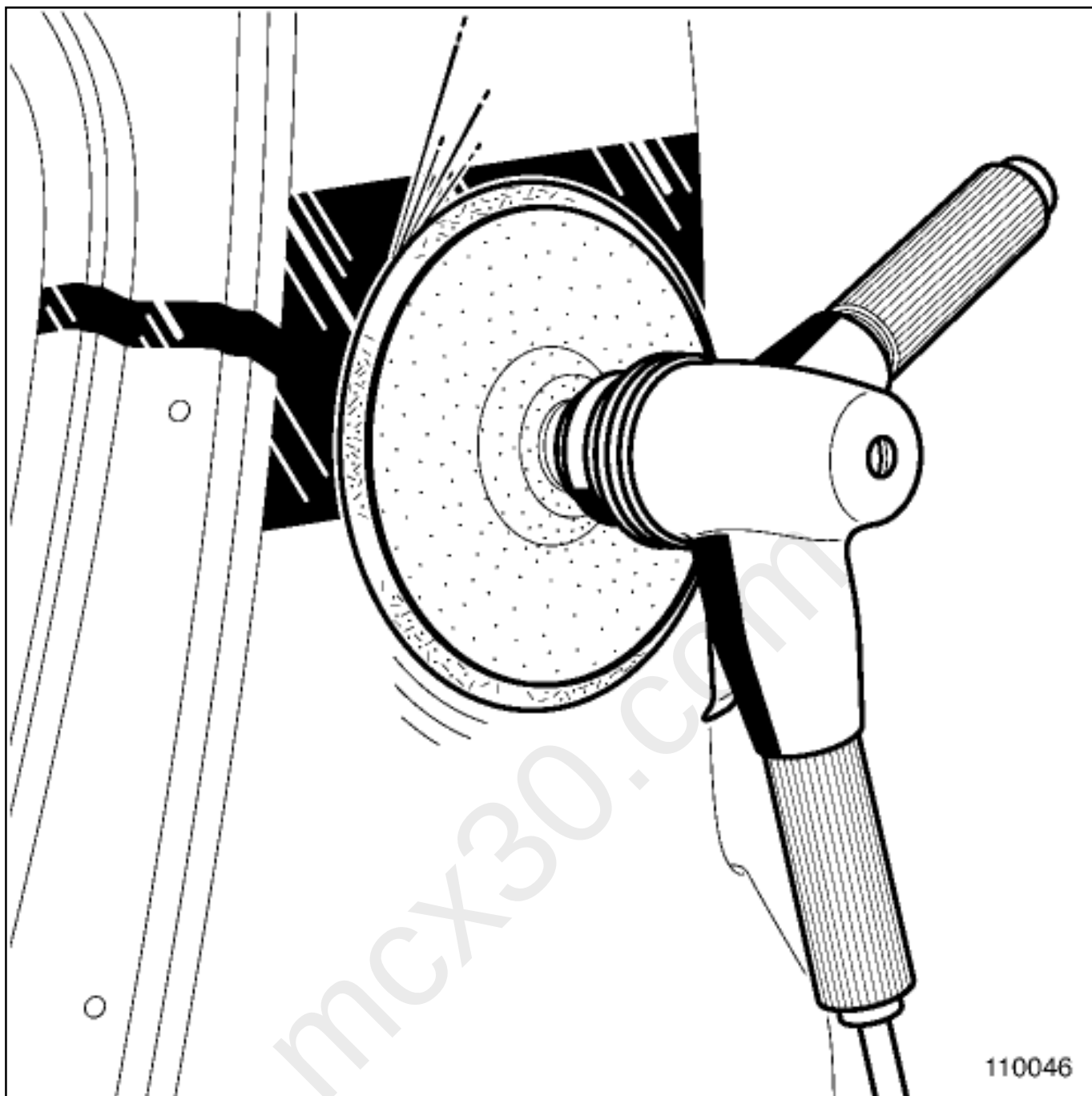
Grind the continuous weld.

(see 05B, Equipment and Tools, Tool for levelling off weld residue: Use)



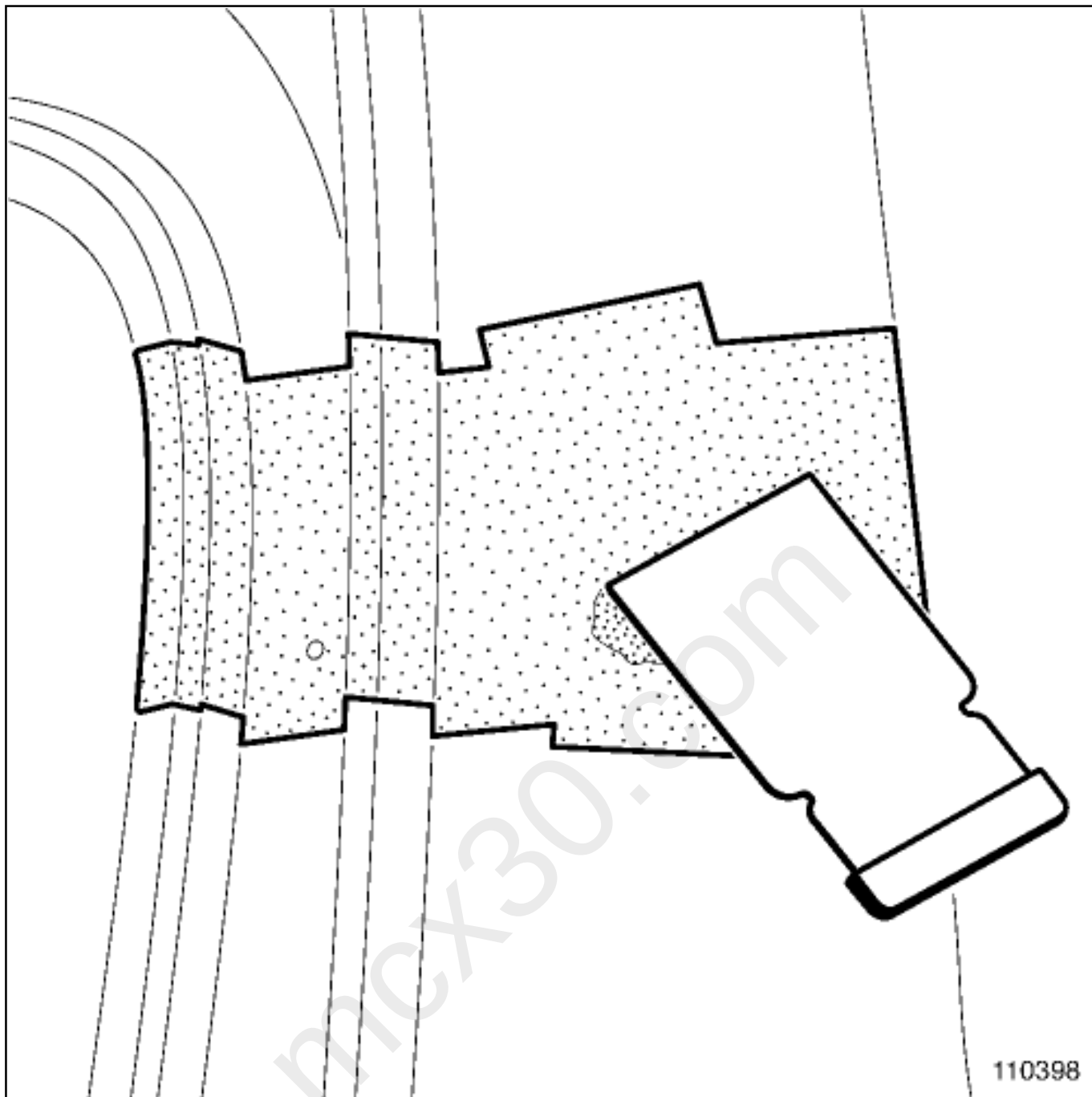
Note:

Do not strike or damage the panel.



Surface the assembly area.

(see 05B, Equipment and Tools, Tool for surfacing mating faces: Use)



Apply a surface finish to the visible parts.

[\(see 04F, Bodywork products and mountings, Panelwork finishing products: Use\)](#)

[\(see 05B, Equipment and Tools, Tools for sanding a structural component: Use\)](#)

#### 6- FITTING PROTECTION AFTER ASSEMBLY

Apply the anti-corrosion protection after assembly.

[\(see 04F, Bodywork products and mountings, Anti-corrosion protection products after assembly: Use\)](#)